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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,474	01/29/2004	Steven T. Fink	071469-0307596 (PC0155A)	3726
Andrej Mitrovic Suite 10 4350 W. Chandler Blvd. Chandler, AZ 85226			EXAMINER CHEN, BRET P	
			ART UNIT 1792	PAPER NUMBER
			MAIL DATE 10/02/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/766,474

**Applicant(s)**

FINK, STEVEN T.

**Examiner**

Bret Chen

**Art Unit**

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,5-9 and 11-31 is/are pending in the application.
- 4a) Of the above claim(s) 13-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-9,11 and 12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)  
Paper No(s)/Mail Date \_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

### **DETAILED ACTION**

Claims 1-2, 5-9, 11-31 are pending in this application, which is an RCE of Serial Number 10/766474. Amended claim 1 is noted.

Claims 13-31 have been withdrawn from consideration as being directed to a nonelected invention.

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/1/08 has been entered.

### ***Specification***

Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

It is noted that the claimed invention is directed to a method which includes a second plasma and a second plasma processing chamber. The examiner suggests amending the abstract to reflect same.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 1-2, 5-9, 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda et al (2002/0005252) in view of Williams et al (5,647,953), and further in view of Wong et al (5,522,932).**

Masuda teaches a method for manufacturing a substrate with a plasma processing system, the method comprising: disposing a substrate on a chuck in a first plasma processing chamber; and forming a first plasma in a processing region within the first plasma processing chamber (see Paragraph [0057] of Masuda). Masuda does not teach the steps of the method comprising: obtaining a component of a plasma processing system which has been coated with a film of material; disposing said component in a first plasma processing chamber; wherein the film of material has been coated using a second plasma in a second plasma processing chamber different from said first plasma processing chamber.

However, Masuda does teach that it is advantageous to perform an in situ pre-seasoning/pre-coating process to prevent corrosion of the interior surface of the apparatus from the plasma etchants before the substrate processing (Paragraph 0032). Williams teaches a method wherein the film of pre-seasoning/pre-coating material has been coated using a plasma, and wherein the chemistries of the plasmas used for deposition of the pre-seasoning/pre-coating film and for processing of the substrate are substantially the same wherein  $\text{SiO}_x$  plasma coatings are used for both the substrate coating and the pre-seasoning coating (col 5, lines 55-67, and col.6 lines 1-5). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the present invention to have modified the method taught by Masuda by coating the film of pre-seasoning/pre-coating material using a plasma because Williams teaches that such methods are known in the art.

Furthermore, Wong teaches the method comprising obtaining a component of a plasma processing system which has been coated with a film of material and disposing said component in a first plasma processing chamber (see Column 6, lines 19 – 33). Therefore, it would have

been obvious to one having ordinary skill in the art at the time of the invention to have modified the method taught by Masuda in view of Williams by plasma coating the plasma processing apparatus parts in a second plasma processing chamber different from said first plasma processing chamber and then reassembling them inside the chamber as taught by Wong (instead of performing an in situ coating step within the chamber as taught by Masuda) with a reasonable expectation of success, because both references teach performing a pre-coating process on apparatus parts that have surfaces exposed to plasma during processing to prevent corrosion.

Regarding Claim 2, Wong inherently teaches the method wherein the obtaining includes obtaining a component from one of a component manufacturer and plasma processing chamber manufacturer, as all such components must come from such a manufacturer.

Regarding Claim 5, Masuda in view of Williams and Wong does not explicitly teach the method wherein the second plasma processing chamber used to coat the component is similar to the first plasma processing chamber where the substrate is disposed. However, as discussed, Wong teaches that corrosion-resistant coatings on the surfaces of plasma apparatus parts exposed to plasma need not be applied in situ, and may, in fact, be successfully applied in a different apparatus. Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the method taught by Masuda in view of Williams and Wong by performing the pre-coating method taught by Masuda, Williams, and Wong on apparatus parts in a different chamber similar to the first chamber (e.g., either of the chambers taught by Masuda or Williams) and then disposing of and reassembling them back in the original chamber before substrate processing as taught by Wong with a reasonable expectation of

success, because both Masuda and Williams teach the use of apparatuses that may be used to plasma coat substrates.

Regarding Claims 6 – 8, Masuda inherently teaches the method wherein the film material, film thickness, and film uniformity are determined by a customer specification, as the film deposited must necessarily be of a specification desired by the customer or user.

Regarding Claim 9, Williams teaches that the silica film has a thickness of 0.2 – 2 microns (see Column 4, lines 49 – 51 of Williams).

Regarding Claim 11, Masuda teaches the method, further comprising pumping excess gas through a pump opening arranged in the plasma processing chamber (see Paragraph [0057]).

**Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda in view of Williams and Wong, and further in view of Shan et al (5,605,637).**

Masuda in view of Williams and Wong does not teach the method wherein: the obtaining includes obtaining a pumping deposition shield that has been coated with a film of material; and the component disposing includes disposing said pumping deposition shield in the pump opening. As discussed, Masuda in view of Williams and Wong teaches that it is advantageous to apply a pre-coating to components and surfaces of the plasma processing apparatus which come into contact with the plasma during processing. Masuda in view of Wong further teaches that it is possible to coat the individual components in a separate processing chamber before reinstalling them back in the chamber to used for substrate processing instead of performing an in site chamber pre-coating process. Shan teaches, in Column 2, lines 27 – 38, that it is advantageous to use a pumping deposition shield “to prevent the plasma from reaching a portion of the reactor

chamber.” Shan further teaches, in Column 6, lines 14 – 22, that “the invention provides a simple yet highly effective technique for reducing dc bias in a plasma etch reactor to a predicted lower level than would be obtained without use of the invention. Thus, higher etch rates can be maintained without the wafer damage and other processing difficulties that ensue from use of a dc bias that is too high.” It would have been obvious to one having ordinary skill in the art to have modified the method taught by Masuda in view of Wong by including a pump deposition shield in the plasma processing apparatus to have obtained the advantages taught by Williams. Furthermore, because one surface of the pumping deposition shield is in fluid contact with the plasma (see Figure 1 of Wong), and the pumping deposition shield functions to prevent plasma from entering the outlet ports for evacuating gases from the chamber, it would have been obvious to one having ordinary skill in the art to have coated the pumping deposition shield taught by Williams with a film of material as taught by Masuda and Wong to have obtained the advantages disclosed by Masuda and Wong, i.e. to prevent corrosion of the pumping deposition shield.

### ***Response to Arguments***

Applicant's arguments filed 5/21/08 have been fully considered but they are not persuasive.

Applicant argues that none of the references teach the use of a second plasma in a second plasma processing chamber different from said first plasma processing chamber (p.6 middle paragraph). Specifically, applicant argues that Wong fails to teach a plasma process performed anywhere (pp.6-7).



The examiner agrees in part. It is first noted that Wong teaches of plasma processing a substrate (col.2 lines 5-22). Hence, applicant's arguments that Wong fails to a plasma process is not well founded. With respect to the second chamber, as a very brief summary, Masuda teaches a typical plasma method of processing a substrate in a processing chamber while Williams teaches the conventionality of seasoning the interior surface of an apparatus by plasma polymerization. Wong teaches the conventionality of coating a surface and then reassembling it for processing in a plasma chamber. Williams specifically teaches of plasma processing a chamber surface to obtain the known advantages. Wong provides the motivation of doing so before assembling back into another plasma chamber. It is the examiner's position that the combination of references clearly teaches of using a second plasma in a second plasma processing chamber different from said first plasma processing chamber.

Applicant's arguments have been considered but are not deemed persuasive.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bret Chen whose telephone number is (571)272-1417. The examiner can normally be reached on 7:30am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bret Chen/  
Primary Examiner, Art Unit 1792  
9/29/08